

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: DRAFT – March 16, 2017

Region: Asheville Regional Office
County: Caldwell
NC Facility ID: 1400007
Inspector's Name: Patrick Ballard
Date of Last Inspection: 05/24/2016
Compliance Code: 3 / Compliance - inspection

<p style="text-align: center;">Facility Data</p> <p>Applicant (Facility's Name): Bernhardt Furniture Company - Plants 3&7</p> <p>Facility Address: Bernhardt Furniture Company - Plants 3&7 1502 Morganton Boulevard Lenoir, NC 28645</p> <p>SIC: 2511 / Wood Household Furniture NAICS: 337122 / Nonupholstered Wood Household Furniture Manufacturing</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p style="text-align: center;">Permit Applicability (this application only)</p> <p>SIP: N/A NSPS: N/A NESHAP: Update GACT Subpart JJJJJ language PSD: N/A PSD Avoidance: N/A NC Toxics: N/A 112(r): N/A Other:</p>
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Contact Data			Application Data
<p style="text-align: center;">Facility Contact</p> <p>Eddie Pitts Corporate Environmental Manager (828) 759-6348 1839 Morganton Blvd Lenoir, NC 28645</p>	<p style="text-align: center;">Authorized Contact</p> <p>Peter (Pete) Craymer Chief Financial Officer and Senior VP (828) 759-6538 1839 Morganton Boulevard Lenoir, NC 28645</p>	<p style="text-align: center;">Technical Contact</p> <p>Eddie Pitts Corporate Environmental Manager (828) 759-6348 1839 Morganton Blvd Lenoir, NC 28645</p>	<p>Application Number: 1400007.16A Date Received: 08/04/2016 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 02000/T30 Existing Permit Issue Date: 06/18/2013 Existing Permit Expiration Date: 08/31/2017**</p>

Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2015	0.4600	9.22	97.32	11.28	7.12	7.14	4.67 [Toluene]
2014	0.5400	10.39	94.62	12.72	9.71	7.23	4.93 [Toluene]
2013	0.3800	7.26	92.65	8.88	8.08	7.92	5.40 [Toluene]
2012	0.3200	6.33	81.59	7.75	7.23	6.77	4.43 [Toluene]
2011	0.1500	2.84	96.44	3.48	5.52	7.79	5.19 [Toluene]

<p>Review Engineer: Judy Lee</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue: 02000/T31 Permit Issue Date: Permit Expiration Date: 08/31/2017** **This permit shall expire on the earlier of July 31, 2022 or the renewal of Permit No. 02000T30 has been issued or denied.</p>
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1. Purpose of Application

Bernhardt Furniture Company – Plants 3 & 7 (Bernhardt) currently operates under Title V Permit No. 02000T30 issued on June 18, 2013, for a furniture manufacturing facility in Lenoir, Caldwell County, North Carolina. This application submittal is to modify Bernhardt's existing permit to add controls to boilers ES-320 and ES-321. The facility just completed repairs to the Boilers at Plant 3. These repairs included the addition of an Oxygen (O₂) sensor in each stack and automated controls that use this O₂ reading to reduce the over and under fire air insertion automatically.

2. Facility Description

The facility is a wood furniture manufacturing complex consisting of two plants (3 and 7). Plant 3 manufactures office furniture such as desks and shelves, and Plant 7 manufactures office chairs. Operations at Plants 3 and 7 include wood furniture finishing, boilers with associated control devices, and wood drying kilns. The complex has added a steam line from Plant 3 to Plant 7 such that the boilers from Plant 3 serve Plant 7. The Plant 7 boilers are rarely used.¹

3. History/Background/Application Chronology

Please see the attached Comprehensive Application Report for Application No. 1400007.16A, as well as email correspondence for more details.

August 4, 2016 – Current application submitted.

4. Permit Modifications/Changes and TVEE Discussion

The following table describes the modifications to the current permit as part of this modification process.

******Add table from Permit**

TVEE was updated accordingly, see pink sheet for approval.

5. New Equipment/Change in Emissions and Regulatory Review:

Proposed Equipment Changes

Equipment to be ADDED: *none*

¹ Review for issued Air Quality Permit No. 02000T29

Equipment to be MODIFIED:

Emission Source ID NO.	Emission Source Description	Control Device ID NO.	Control Device Description
ES-320 GACT JJJJJ	One firetube design wood fuel-fired boiler (14.3 million Btu per hour maximum heat input rate) with oxygen trim system	CD-320	One multicyclone (10 nine-inch diameter tubes)
ES-321 GACT JJJJJ	One firetube design wood fuel-fired boiler (14.3 million Btu per hour maximum heat input rate) with oxygen trim system	CD-321	One multicyclone (10 nine-inch diameter tubes)

Equipment to be REMOVED: *none*

Facility Emissions Review

Total Facility-wide emissions – see table above.

Regulatory Review

In addition to requirements provided in Section 3 – General Conditions, this facility is currently subject to the following regulations:

15A NCAC 2D .0504, Particulates from Wood Burning Indirect Heat Exchangers
15A NCAC 2D .0512, Particulates from Miscellaneous Wood Products Finishing Plants
15A NCAC 2D .0515, Particulates from Miscellaneous Industrial Processes
15A NCAC 2D .0516, Sulfur Dioxide from Combustion Sources
15A NCAC 2D .0521, Control of Visible Emissions
15A NCAC 2D .1111, Maximum Achievable Control Technology MACT (Subpart JJ & DDDD) and Generally Achievable Control Technology GACT (Subpart JJJJJ)
15A NCAC 2Q .0317 Avoidance Conditions – Limitation to Avoid being Major for Hazardous Air Pollutants (HAP)

An extensive review for each applicable regulation above will not be included in this document, as the facility's status with respect to these regulations has not changed, except as noted:

- 15A NCAC 2D .1111, Maximum Achievable Control Technology MACT (Subpart JJJJJ) – 40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories, Subpart JJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources – On March 21, 2011, the US Environmental Protection Agency issued the Industrial, Commercial, and Institutional Boilers Area Source Rule - Subpart JJJJJ. The rule provides for the use of generally available control technologies ["GACT"] or management practices by area sources (small facilities) to reduce emissions of hazardous air pollutants. It covers boilers burning oil, coal, biomass (wood), and other solid or liquid fuels to produce steam or hot water for energy or heat. It is commonly referred to as the Boiler 6J GACT Rule.

The last permit modification added an avoidance condition for HAPs; thus, the facility was no longer subject to Case-by-Case MACT 112(j) and became subject to the Boiler GACT Subpart JJJJJ.

- ✓ *Bernhardt requested a HAP minor limitation be place in their permit during their previous modification to avoid being major and subject to MACT standards (i.e., Case-by-Case MACT 112(j) for boilers); thus, they had to comply with Subpart JJJJJ within 180 days of the later of March 21, 2014 or upon the existing major source commencing operation as an area source.*

❖ Bernhardt met this requirement on September 16, 2013.

As previously stated Bernhardt wishes to change their tune-ups for boilers ES-320 and ES-321 from biennial to every 5 years due to boiler repairs which included the addition of an oxygen (O₂) sensor in each stack and automated controls that use the O₂ reading to reduce over and under fire air insertion automatically. This satisfies the definition of an oxygen trim system per:

§63.11237 What definitions apply to this subpart?

...

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device over its operating load range. A typical system consists of a flue gas oxygen and/or carbon monoxide monitor that automatically provides a feedback signal to the combustion air controller or draft controller.

...

§63.11223 How do I demonstrate continuous compliance with the work practice and management practice standards?

...

(c) Boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up must conduct a tune-up of the boiler every 5 years as specified in paragraphs (b)(1) through (7) of this section. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed boiler with an oxygen trim system, the first 5-year tune-up must be no later than 61 months after the initial startup. You may delay the burner inspection specified in paragraph (b)(1) of this section and inspection of the system controlling the air-to-fuel ratio specified in paragraph (b)(3) of this section until the next scheduled unit shutdown, but you must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 months. If an oxygen trim system is utilized on a unit without emission standards to reduce the tune-up frequency to once every 5 years, set the oxygen level no lower than the oxygen concentration measured during the most recent tune-up.

- ✓ Bernhardt's permit was revised with the appropriate monitoring, recordkeeping and reporting requirements per Subpart JJJJJ.

6. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

NSPS

The facility is not currently subject to any New Source Performance Standards.

This permit modification does not affect this status.

NESHAPS/MACT

Bernhardt is currently subject to the three MACTs:

✓ MACT JJ

As noted previously, the facility is subject to MACT JJ. On November 21, 2011, the EPA promulgated the Residual Risk and Technology Review (RRTR) for MACT JJ. The RRTR amended MACT JJ to prohibit conventional spray guns and to limit emissions of formaldehyde from facilities to 400 pounds per 12-month period. These amendments were incorporated into Permit Condition 2.2A for the MACT JJ sources.²

✓ MACT DDDD

The dry kilns at Plant 3 (ID No. ES-DK-3) are subject to 40 CFR 63 Subpart DDDD (MACT 4D), Plywood and Composite Wood Products Manufacturing. The only requirement for the kilns under MACT 4D is submittal of initial notification.

✓ MACT JJJJJ

As noted previously, the facility became subject to MACT 6J during the last permit revision. The requirements were placed in the permit at that time. Since that time the facility has conducted boiler rebuilds on ES-320 and ES-321, which also allowed them to install an oxygen trim system. This was addressed during this modifications.

PSD

Caldwell County is designated as in attainment. Bernhardt is classified as a major source for PSD purposes, based on the potential emissions of VOC from the facility.

This permit modification does not affect the PSD status of the facility.

Attainment

The minor source baseline dates have not been triggered for any criteria pollutants in Caldwell County (NO_x, PM₁₀ or SO₂).

Hence, this permit modification does not consume or expand increments for any pollutants.

112(r)

The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in 112(r).

This permit modification does not affect the 112(r) status of the facility.

² *Ibid 1*

CAM

40 CFR Part 64 is applicable to any pollutant-specific emission unit, if the following three conditions are met:

- the unit is subject to any (non-exempt: e.g. pre November 15, 1990, Section 111 or Section 112 standard) emission limitation or standard for the applicable regulated pollutant.
- the unit uses any control device to achieve compliance with any such emission limitation or standard.
- the unit's precontrol potential emission rate exceeds either 100 tons/yr (for criteria pollutants) or 10/25 tons/yr (for HAPs).

The facility uses cyclones and bagfilters to control emissions of particulate matter (PM) and PM with an aerodynamic diameter less than or equal 10 micrometers (PM10) from its woodworking operations (ID Nos. ES-WDSP-3 and ES-WDSP-7). As detailed in the review for the renewal the wood working operations and the fly ash separator have maximum potential precontrol emissions of less than 100 tons per year. The other emission sources at the facility either have no control devices or are subject to a 112 standard promulgated after November 15, 2009. Therefore, CAM is not applicable to this facility.

7. Facility Wide Air Toxics [Excerpt from review for renewal]

Under 2Q .0705, “Existing Facilities and SIC Calls,” a facility has to demonstrate facility-wide compliance with NC Air Toxics at the same time it has to be in compliance with the “Last MACT” known to apply to the facility, excluding MACTs for combustion sources. As noted previously, the facility is subject to three MACTs. The table below summarizes their status with respect to the “Last MACT.”

Emission Sources	Applicable MACT	MACT Compliance Date	“Last MACT” Status
ES-320 ES-321 ES-721 ES-722	Case-by-Case MACT	May 26, 2013	<u>YES</u> The boilers at the facility are not considered combustion sources under 2Q .0703(6)
ES-SBP-3 ES-SBP-7	MACT JJ	November 21, 1997	NO MACT JJ sources are exempted from NC Air Toxics under 2Q .0702(a)(23)
ES-DK-3	MACT DDDD	120 days after September 28, 2004 (i.e., January 26, 2005)	NO

Under 2Q .0703(6), combustion sources are defined as “boilers, space heaters, process heaters, internal combustion engines, and combustion turbines, which burn only unadulterated wood or

unadulterated fossil fuel.” Bernhardt burns adulterated fuels in its boilers,³ and, thus, these boilers do not qualify as “combustion sources” as defined in 2Q .0703(6). Therefore, the boilers at Bernhardt lose their exemption as combustion sources under 2Q .0705, and the Case-by-Case MACT becomes the “Last MACT” for the facility. Facility-wide compliance with NC Air Toxics is due by May 26, 2013, which is the compliance date for the Case-by-Case MACT.

Under Session Law 2012-091, which became effective on July 1, 2012, the General Assembly enacted changes to G.S. 143-215.107(a) to exempt certain emission sources subject to federal regulations from the NC Air Toxics regulations. The amended statute reads, in part, as follows:

G.S. 143-215.107(a)(5)...

...

The Department shall implement rules adopted pursuant to this subsection as follows:

- a. Except as provided in sub-subdivision b. of this subdivision, rules adopted pursuant to this subdivision that control emissions of toxic air pollutants shall not apply to an air emission source that is any of the following:*
 - 1. Subject to an applicable requirement under 40 C.F.R. Part 61, as amended.*
 - 2. An affected source under 40 C.F.R. Part 63, as amended.*
 - 3. Subject to a case-by-case maximum achievable control technology (MACT) permit requirement issued by the Department pursuant to 42 U.S.C. § 7412(j), as amended.*

Therefore, the only emissions sources to be included in the air toxic evaluation under the “Last MACT” triggered air toxics evaluation are those not affected by a MACT or 112(j), pursuant to Session Law 2012-91. The only emission sources at the facility that are not subject to MACT or 112(j) are the woodworking operations (ID Nos. ES-WDSP-3 and ES-WDSP-7) and the fly ash separator (ID No. ES-322).

➤ This rule has been repealed and will be removed during permit renewal.

8. Compliance Status

DAQ has reviewed the compliance status of this facility. During the most recent inspection, conducted on May 24, 2016 by Mr. Patrick Ballard of the ARO, the facility appeared to be in compliance with their current air permit (Air Quality Permit No. 02000T30).

Excerpt from latest Inspection Report

Facility Compliance History:

Inspection or Test DATE	Notice of Violation DATE	Description of violation(s)
08/29/2014	09/05/2014	NOV issued for lack of recordkeeping on the bagfilter exhaust observations at Plant 7.

³ The facility indicated it burned adulterated fuel in a letter dated September 9, 2009, which was submitted in response to information requested under Permit Application No. 1400007.09A.

Inspection or Test DATE	Notice of Violation DATE	Description of violation(s)
	07/21/2010	NOV/NRE issued for late submittal of emissions inventory.
02/06/2007	02/20/2007	NOV - MACT, Subpart JJ - Operation of spray guns at a pressure greater than 10 psi.
	08/26/2005	NOV/NRE for late submittal of the July 2005 semi-annual MACT and TV compliance reports.

Additionally, a signed Title V Compliance Certification (Form E5) indicating that the facility was in compliance with all applicable requirements was included with the permit application.

9. Public Notice/EPA and Affected State(s) Review

A notice of the DRAFT Title V Permit shall be made pursuant to 15A NCAC 2Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit pursuant shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. The states of Tennessee and Virginia as well as the Western North Carolina Regional Air Quality Agency and Mecklenburg County Department of Environmental Protection are all affected areas within 50 miles of this facility and will be notified accordingly.

Public Notice of the DRAFT Title V Permit ran from XXXX to XXXX.

Comments Received on the Draft Permit – No public comments received to date.

EPA's 45 Day Review period ran concurrent with the 30 day Public Notice from XXXX to XXXX.

No comments were received from EPA, U. S. EPA, Region 4, regarding the Draft Permit.

10. Other Regulatory Considerations

- A P.E. seal is NOT required for this application.
- A zoning consistency determination is NOT required for this application.

11. Recommendations

The permit application for Bernhardt Furniture Company – Plants 3 & 7 located in Lenoir, Caldwell County, NC has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility is complying or will achieve compliance, as specified in the permit, with all requirements that are applicable to the affected sources. The NC DAQ recommends the issuance of Air Permit No. 02000T31.